

precisely as do the stationary beams of light that generally precede the appearance of the "merry dancers." The points at which these fleeting clouds begin and end their upward movement represent the bottom and top of the layer within which the whole auroral display is going on, and probably the same may be said as to the lower and upper ends of the brilliant, definite, and long enduring beams of light generally called "streamers." These rapidly moving flashes of light, like ordinary lightning, appear to represent electric discharges between the earth or lower atmosphere and the upper atmosphere, and it is during their continuance that the magnetic needles are most violently disturbed, as though, at that time, the discharges were taking place nearest to the station, or as though they required most violent fluctuations in the local potential, or difference of potential, in order to produce them. In this connection the reader should study the diagram given on Chart VIII.

#### EARTH CURRENTS AND MAGNETIC STORMS.

Disturbances on the telegraph lines were reported at a few stations in this country on the 30th in Ohio, Wisconsin, and between Boston, Mass., and Buffalo, N. Y., at 5.30 p. m., increasing until at 7 p. m. the trouble had become general and

a wire from Boston, Mass., to Manchester, N. H., was run by the earth current alone; the line from Boston, Mass., to St. John, N. B., also showed much disturbance. The noises on government telephone lines in Great Britain were especially studied by the General Superintendent, Mr. Preece.

By the kindness of the Superintendent of the U. S. Naval Observatory it becomes possible to give on Chart VIII a facsimile of the curves of the self-registering magnetic declination, horizontal force, and vertical force during the 29th and 30th, from which it will be seen that the disturbances of the magnetic needle were unusually large and violent.

#### BALL LIGHTNING.

Dr. Howard Shriver, of Cumberland, Md., reports, with reference to an electric storm on March 21, that a lightning flash struck nearly two miles southwest of the town, and the same crash seems to have also reached close to the town where the lightning and thunder were not more than one and one-half seconds apart.

A Mrs. Brackett, while standing at her window, saw a "ball of fire" about as big as your two fists pass rapidly (apparently *along down outside of the window pane*), *ending in an explosion like a gun*. The explosion was heard by others in the house. The electric wires were so injured as to need repair in this part of the house only.

### STATE WEATHER SERVICES.

[Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.]

The following extracts and summaries are republished from reports for March, 1894, of the directors of the state weather services. The Maryland service includes Delaware and the District of Columbia. The New England service includes the six New England States. The organization of a service for Alaska, under the director of the California State service, is contemplated.

#### ALABAMA.

*Temperature*.—The mean was 4.5 above the normal; maximum, 88, at Tuscaloosa, 19th; minimum, 15, at Newburg, 27th; greatest monthly range, 70, at Newburg; least monthly range, 49, at Opelika.

*Precipitation*.—The average was 1.04 below the normal; greatest monthly, 11.51, at Mobile; least monthly, 1.31, at Sturdevant.

*Wind*.—Prevailing direction, south.—*F. P. Chaffee, Local Forecast Official, Weather Bureau, Montgomery, director.*

#### ARIZONA.

*Temperature*.—The mean was 2.0 below the normal; maximum, 96, at Palomas, 28th; minimum, —9, at Whipple Barracks, 5th; greatest monthly range, 88, at Whipple Barracks; least monthly range, 49, at Peoria.

*Precipitation*.—The average was normal; greatest monthly, 5.20, at Flagstaff; least monthly, 0.00, at Walnut Grove.

*Wind*.—Prevailing direction, southwest.—*W. R. Burrows, Observer, Weather Bureau, Tucson, director.*

#### ARKANSAS.

*Temperature*.—The mean was 3.5 above the normal; maximum, 88, at Ashdown, 13th; minimum, 8, at Rogers, 26th; greatest monthly range, 75, at Rogers; least monthly range, 55, at Mount Nebo.

*Precipitation*.—The average was 4.86 above the normal; greatest monthly, 18.20, at Madding; least monthly, 4.38, at Texarkana.

*Wind*.—Prevailing direction, south.—*F. H. Clarke, Local Forecast Official, Weather Bureau, Little Rock, director; G. G. Harkness, Observer, Weather Bureau, assistant.*

#### CALIFORNIA.

*Temperature*.—The mean was 1.6 below the normal; maximum, 105, at Volcano Springs, 28th; minimum, —7, at Truckee, 3d; greatest monthly range, 67, at Winchester; least monthly range, 26, at Point Lobos.

*Precipitation*.—The average was 2.00 below the normal; greatest monthly, 15.41, at Crescent City Lighthouse; least monthly, 0.00, at a number of stations.

*Wind*.—Prevailing direction, west.—*J. A. Barwick, Observer, Weather Bureau, Sacramento, director.*

#### COLORADO.

*Temperature*.—The mean was 2.0 above the normal; maximum, 85, at Minneapolis, 16th; minimum, —19, at Gunnison, 7th; greatest monthly range, 76, at Brush; least monthly range, 43, at Pikes Peak.

*Precipitation*.—The average was 0.50 below the normal; greatest monthly, 4.81, at Climax; least monthly, trace, at Las Animas, Monte Vista, and Sanborn.

*Wind*.—Prevailing direction, west.—*G. A. Loveland, Observer, Weather Bureau, Denver, director.*

#### CONNECTICUT.

*Temperature*.—The mean was 6.6 above the normal; maximum, 72, at Canton, 19th; minimum, 11, at Voluntown, 27th; greatest monthly range, 60, at Canton; least monthly range, 44, at New London.

*Precipitation*.—The average was 2.94 below the normal; greatest monthly, 2.07, at New London; least monthly, 0.94, at North Grosvenor Dale.

*Wind*.—Prevailing direction, southwest.—*J. Warren Smith, Weather Bureau, Boston, Mass., director.*

#### DELAWARE.

*Temperature*.—Maximum, 84, at Milford, 22d; minimum, 17, at Millsboro, 28th; greatest monthly range, 65, at Millsboro and Milford; least monthly range, 58, at Dover.

*Precipitation*.—Greatest monthly, 1.60, at Millsboro; least monthly, 1.18, at Seaford.

*Wind*.—Prevailing direction, southwest.—*Dr. William B. Clark, Johns Hopkins University, Baltimore, Md., director; C. P. Cronk, Observer, Weather Bureau, in charge.*

#### FLORIDA.

*Temperature*.—The mean was 1.5 above the normal; maximum, 93, at Archer, 22d, and at Kissimmee, 21st; minimum, 29, at Pensacola and Tallahassee, 27th; greatest monthly range, 59, at Archer; least monthly range, 22, at Key West.

*Precipitation*.—The average was 1.25 below the normal; greatest monthly, 7.52, at Pensacola; least monthly, 0.53, at Orange City.

*Wind*.—Prevailing direction, east.—*E. R. Demain, Observer, Weather Bureau, Jacksonville, director.*

#### GEORGIA.

*Temperature*.—The mean was 4.0 above the normal; maximum, 92, at Brag and Fleming, 22d; minimum, 15, at Dahlonga, 27th; greatest monthly range, 69, at Elberton; least monthly range, 53, at Hephzibah.

*Precipitation*.—Greatest monthly, 7.12, at Thomasville; least monthly, 1.71, at Leverett.

*Wind*.—Prevailing direction, south.—*Park Morrill, Local Forecast Official, Weather Bureau, Atlanta, director.*

#### IDAHO.

*Temperature*.—Maximum, 72, at Boise Barracks, 27th; minimum, —12, at Lake, 5th; greatest monthly range, 66, at Fort Lemhi; least monthly range, 31, at Atlanta.

*Precipitation*.—Greatest monthly, 7.35, at Garden Valley; least monthly, 0.40, at Kootenai.

*Wind*.—Prevailing direction, south.—*J. H. Smith, Observer, Weather Bureau, Idaho Falls, director.*

## ILLINOIS.

*Temperature.*—The mean was 8.6 above the normal; maximum, 85, at East Peoria, 10th; minimum, 4, at Dixon, 29th.

*Precipitation.*—The average was 0.05 above the normal; greatest monthly, 4.22, at Atwood; least monthly, 0.73, at Warsaw.

*Wind.*—Prevailing direction, south.—*John Craig, Observer, Weather Bureau, Springfield, director.*

## INDIANA.

*Temperature.*—The mean was 8.1 above the normal; maximum, 86, at Worthington and Bedford, 21st; minimum, 8, at Hawpatch, 26th; greatest monthly range, 74, at Union City; least monthly range, 64, at Huntingburg.

*Precipitation.*—The average was 0.04 above the normal; greatest monthly, 7.50 at Marengo; least monthly, 0.98, at Union City.

*Wind.*—Prevailing direction, southwest.—*Prof. H. A. Huston, Lafayette, director; C. F. R. Wappenhans, Local Forecast Official, Weather Bureau, assistant.*

## IOWA WEATHER AND CROP SERVICE.

*Temperature.*—The mean was 10.0 above the normal; maximum, 85, at Logan, 17th; minimum, —5, at Larrabee, Sibley, and Spirit Lake, 25th; greatest monthly range, 87, at Larrabee; least monthly range, 67, at Mount Pleasant.

*Precipitation.*—The average was normal; greatest monthly, 4.52, at Cedar Rapids; least monthly, 0.26, at Murray.

*Wind.*—Prevailing direction, south.—*J. R. Sage, Des Moines, director; G. M. Chappel, Local Forecast Official, Weather Bureau, assistant.*

## KANSAS.

*Temperature.*—The mean was 5.7 above the normal; maximum, 92, at Englewood, 14th; minimum, zero, at Iona and Lakin, 26th; greatest monthly range, 87, at Englewood and Iona; least monthly range, 65, at Columbus.

*Precipitation.*—The average was 0.72 below the normal; greatest monthly, 3.48, at Marmaton; least monthly, 0.00, at Hays City.

*Wind.*—Prevailing direction, south.—*T. B. Jennings, Observer, Weather Bureau, Topeka, director.*

## KENTUCKY.

*Temperature.*—The mean was 6.4 above the normal; maximum, 86, at Greendale, 21st, and at Bowling Green, 17th; minimum, 10, at Caddo, 25th, at Pellville and Richmond, 26th, and at Eubanks, 27th; greatest monthly range, 75, at Eubanks; least monthly range, 54, at Lexington.

*Precipitation.*—The average was 1.40 below the normal; greatest monthly, 5.85, at Canton; least monthly, 1.15, at Sandy Hook.

*Wind.*—Prevailing direction, southwest.—*Frank Burke, Local Forecast Official, Weather Bureau, Louisville, director.*

## LOUISIANA.

*Temperature.*—The mean was 3.0 above the normal; maximum, 88, at Bastrop, 15th, at Liberty Hill, 13th, and at Maurepas, 20th; minimum, 22, at Davis, 26th, and at Liberty Hill, Sugartown, and Rayne, 27th; greatest monthly range, 66, at Liberty Hill; least monthly range, 37, at Port Eads.

*Precipitation.*—The average was 1.70 above the normal; greatest monthly, 10.48, at Monroe; least monthly, 2.91, at Cameron.

*Wind.*—Prevailing direction, south.—*R. E. Kerkam, Local Forecast Official, Weather Bureau, New Orleans, director.*

## MAINE.

*Temperature.*—The mean was 4.6 above the normal; maximum, 72, at Farmington, 6th; minimum, —13, at Fort Kent, 31st; greatest monthly range, 78, at Fort Kent; least monthly range, 38, at Eastport.

*Precipitation.*—The average was 2.17 below the normal; greatest monthly, 2.51, at North Bridgeton; least monthly, 0.86, at Fairfield.

*Wind.*—Prevailing direction, southwest.—*J. Warren Smith, Weather Bureau, Boston, Mass., director.*

## MARYLAND.

*Temperature.*—Maximum, 86, at Benedict, 20th; minimum, 2, at Sunnyside, 28th; greatest monthly range, 72, at Sunnyside; least monthly range, 53, at New Market.

*Precipitation.*—Greatest monthly, 2.84, at Woodstock; least monthly, 0.65, at Mount St. Marys.

*Wind.*—Prevailing directions, southwest and northwest.—*Dr. William B. Clark, Johns Hopkins University, Baltimore, director; C. P. Cronk, Observer, Weather Bureau, in charge.*

## MASSACHUSETTS.

*Temperature.*—The mean was 8.5 above the normal; maximum, 79, at Lowell (c), 19th; minimum, 4, at Ludlow, 27th; greatest monthly range, 63, at Groton and Leicester; least monthly range, 30, at Nantucket.

*Precipitation.*—The average was 2.88 below the normal; greatest monthly, 2.45, at Fall River; least monthly, 0.37, at Cambridge (a).

*Wind.*—Prevailing direction, southwest.—*J. Warren Smith, Weather Bureau, Boston, director.*

## MICHIGAN.

*Temperature.*—The mean was 8.9 above the normal; maximum, 78, at Rawsonville, 18th, and Alma, 19th; minimum, —3, at Evart, 27th; greatest monthly range, 76, at Evart; least monthly range, 48, at Escanaba and Lake City.

*Precipitation.*—The average was 0.16 below the normal; greatest monthly, 5.71, at Boon; least monthly, 0.40, at Olivet.

*Wind.*—Prevailing direction, southwest.—*E. A. Evans, Local Forecast Official, Weather Bureau, Detroit, director.*

## MINNESOTA.

*Temperature.*—Maximum, 81, at Granite Falls, 17th; minimum, —24, at Pokegama Falls, 27th; greatest monthly range, 87, at Granite Falls; least monthly range, 56, at Crookston and Duluth.

*Precipitation.*—Greatest monthly, 4.67, at Cromwell; least monthly, 0.74, at Mazeppa.

*Wind.*—Prevailing direction, northwest.—*E. A. Beals, Observer, Weather Bureau, Minneapolis, director.*

## MISSISSIPPI.

*Temperature.*—The mean was 3.0 above the normal; maximum, 88, at Hattiesburg, 16th, and at Water Valley, 22d; minimum, 18, at French Camps and Louisville, 27th.

*Precipitation.*—The average was normal; greatest monthly, 10.11, at Edwards; least monthly, 2.69, at University.—*R. J. Hyatt, Local Forecast Official, Weather Bureau, Vicksburg, director.*

## MISSOURI.

*Temperature.*—The mean was 7.2 above the normal; maximum, 89, at Harrisonville, 17th; minimum, 5, at Arthur, 26th; greatest monthly range, 79, at Harrisonville; least monthly range, 50, at Gayoso.

*Precipitation.*—The average was 0.30 above the normal; greatest monthly, 7.97, at Gayoso; least monthly, 0.39, at Brunswick.

*Wind.*—Prevailing direction, southwest.—*A. E. Hackett, Observer, Weather Bureau, Columbia, director.*

## MONTANA.

*Temperature.*—The mean was 3.0 below the normal; maximum, 71, at Mingusville, 2d; minimum, —20, at Mingusville, 25th; greatest monthly range, 91, at Mingusville; least monthly range, 45, at Fort Missoula.

*Precipitation.*—The average was 1.00 above the normal; greatest monthly, 4.03, at Miles City; least monthly, 0.56, at Deer Lodge City.

*Wind.*—Prevailing direction, southwest.—*J. M. Sherier, Observer, Weather Bureau, Helena, director.*

## NEBRASKA.

*Temperature.*—The mean was 3.7 above the normal; maximum, 88, at Hebron, 17th; minimum, —9, at Bassett, 25th; greatest monthly range, 92, at Glenwood; least monthly range, 60, at Burwell.

*Precipitation.*—The average was 0.20 below the normal; greatest monthly, 3.19, at Crete; least monthly, 0.20, at Haigler.

*Wind.*—Prevailing direction, northwest.—*George E. Hunt, Local Forecast Official, Weather Bureau, Omaha, director.*

## NEVADA.

*Temperature.*—The mean was 1.0 below the normal; maximum, 88, at Downeyville, 11th; minimum, —13, at Stofiel, 22d; greatest monthly range, 76, at McGill; least monthly range, 46, at Golconda.

*Precipitation.*—The average was 0.44 below the normal; greatest monthly, 5.28, at Ely; least monthly, 0.00, at Hot Springs.

*Wind.*—Prevailing direction, southwest.—*Prof. Charles W. Friend, Carson City, director; F. A. Carpenter, Observer, Weather Bureau, assistant.*

## NEW HAMPSHIRE.

*Temperature.*—The mean was 7.0 above the normal; maximum, 76, at Nashua, 19th; minimum, —3, at Stratford, 28th, and at West Milan, 1st and 28th; greatest monthly range, 75, at West Milan; least monthly range, 51, at East Canterbury.

*Precipitation.*—The average was 1.97 below the normal; greatest monthly, 2.43, at North Conway; least monthly, 0.64, at Peterboro.

*Wind.*—Prevailing direction, southwest.—*J. Warren Smith, Weather Bureau, Boston, Mass., director.*

## NEW JERSEY.

*Temperature.*—The mean was 7.4 above the normal; maximum, 88, at Millville and Vineland, 22d; minimum, 12, at Allaire, 28th; greatest monthly range, 66, at Allaire and Woodbine; least monthly range, 46, at Oceanic.

*Precipitation.*—The average was 2.01 below the normal; greatest monthly, 2.65, at Toms River; least monthly, 1.09, at Dover.

*Wind.*—Prevailing direction, northwest.—*E. W. McGann, Observer, Weather Bureau, New Brunswick, director.*

## NEW MEXICO.

*Temperature.*—The mean was normal; maximum, 86, at Rincon, 14th; minimum, —10, at Hot Sulphur Springs, 5th; greatest monthly range, 73, at Chama; least monthly range, 51, at Galisteo and Santa Fe.

*Precipitation.*—The average was slightly below the normal; greatest monthly, 2.60, at Chama; least monthly, 0.00, at Albert.—*H. B. Hersey, Observer, Weather Bureau, Santa Fe, director.*

## NEW YORK.

*Temperature.*—The mean was 7.8 above the normal; maximum, 80, at Eden Center, 18th; minimum, 1, at Number Four, 27th; greatest monthly range, 72, at Varysburg; least monthly range, 42, at Willets Point.

**Precipitation.**—The average was 1.13 below the normal; greatest monthly, 4.48, at Bovina Center; least monthly, 0.58, at Romulus.

**Wind.**—Prevailing direction, south.—*Prof. E. A. Fuytes, Dean of the College of Civil Engineering, Cornell University, Ithaca, director; R. M. Hardinge, Observer, Weather Bureau, assistant.*

#### NORTH CAROLINA.

**Temperature.**—The mean was 6.3 above the normal; maximum, 93, at Washington, 22d; minimum, 4, at Highlands, 27th; greatest monthly range, 78, at Rutherford College; least monthly range, 37, at Southport.

**Precipitation.**—The average was 2.85 below the normal; greatest monthly, 4.77, at Falkland; least monthly, 0.67, at Marion.

**Wind.**—Prevailing direction, southwest.—*Dr. Herbert B. Battle, Raleigh, director; C. F. von Herrmann, Observer, Weather Bureau, assistant.*

#### NORTH DAKOTA.

**Temperature.**—The mean was 3.5 above the normal; maximum, 69, at Ashley and Fort Yates, 16th; minimum, -22, at Woodbridge, 25th; greatest monthly range, 90, at Ashley; least monthly range, 58, at Grafton.

**Precipitation.**—The average was 0.77 above the normal; greatest monthly, 3.52, at Washburn; least monthly, 0.45, at New Salem.

**Wind.**—Prevailing direction, northwest.—*B. H. Bronson, Observer, Weather Bureau, Bismarck, director.*

#### OHIO WEATHER AND CROP SERVICE.

**Temperature.**—The mean was 9.0 above the normal; maximum, 91, at Portsmouth, 20th; minimum, 3, at Bowling Green, 26th; greatest monthly range, 77, at Coalton; least monthly range, 55, at Cleveland.

**Precipitation.**—The average was 0.63 below the normal; greatest monthly, 3.54, at Bangorville; least monthly, 0.83, at Pomeroy and Thurman.

**Wind.**—Prevailing direction, southwest.—*L. N. Bonham, Columbus, director; C. M. Strong, Observer, Weather Bureau, assistant.*

#### OKLAHOMA.

**Temperature.**—The mean was 7.0 above the normal; maximum, 94, at Anadarko, 18th; minimum, 9, at Fort Supply, 28th, and at Pond Creek, 29th; greatest monthly range, 81, at Purcell; least monthly range, 61, at South McAlester.

**Precipitation.**—The average was 0.50 above the normal; greatest monthly, 7.28, at Kemp; least monthly, 0.10, at Buffalo.

**Wind.**—Prevailing direction, south.—*J. I. Widmeyer, Observer, Weather Bureau, Oklahoma City, director.*

#### OREGON.

**Temperature.**—The mean was 1.2 below the normal; maximum, 83, at Newport, 24th; minimum, -12, at Burns, 3d; greatest monthly range, 76, at Burns; least monthly range, 25, at Bandon.

**Precipitation.**—The average was 1.58 above the normal; greatest monthly, 25.63, at Glenora; least monthly, 0.70, at Burns and Fife.

**Wind.**—Prevailing direction, southwest.—*S. M. Blanford, Observer, Weather Bureau, Portland, director.*

#### PENNSYLVANIA.

**Temperature.**—The mean was 8.2 above the normal; maximum, 84, at Aqueduct, 22d; minimum, -2, at Saegertown, 28th; greatest monthly range, 77, at Saegertown; least monthly range, 50, at Altoona.

**Precipitation.**—The average was 1.94 below the normal; greatest monthly, 2.90, at Uniontown; least monthly, 0.24, at Wellsboro.

**Wind.**—Prevailing direction, west.—*Under direction of the Franklin Institute, Philadelphia; W. P. Tatham, director; T. F. Townsend, Local Forecast Official, Weather Bureau, assistant.*

#### RHODE ISLAND.

**Temperature.**—The mean was 6.8 above the normal; maximum, 66, at Pawtucket and Providence, 6th; minimum, 14, at Kingston, 27th; greatest monthly range, 48, at Providence; least monthly range, 36, at Block Island.

**Precipitation.**—The average was 2.28 below the normal; greatest monthly, 2.15, at Block Island; least monthly, 1.10, at Bristol.

**Wind.**—Prevailing direction, southwest.—*J. Warren Smith, Weather Bureau, Boston Mass., director*

#### SOUTH CAROLINA.

**Temperature.**—The mean was 5.0 above the normal; maximum, 90, at Columbia, 22d, and at Cheraw(a), 17th; minimum, 18, at Hollands Store, 27th; greatest monthly range, 68, at Hollands Store; least monthly range, 45, at Timmonsville.

**Precipitation.**—The average was 2.14 below the normal; greatest monthly, 3.49, at Pinopolis; least monthly, 0.71, at Little Mountain.

**Wind.**—Prevailing direction, southwest.—*J. W. Bauer, Observer, Weather Bureau, Columbia, director.*

#### SOUTH DAKOTA.

**Temperature.**—The mean was 4.7 above the normal; maximum, 86, at Alexandria, 16th; minimum, -23, at Ashcroft, 24th; greatest monthly range, 93, at De Smet; least monthly range, 71, at Bowdle and Rapid City.

**Precipitation.**—The average was 1.26 above the normal; greatest monthly, 7.40, at Spearfish; least monthly, 0.50, at Tyndall.

**Wind.**—Prevailing direction, northwest.—*S. W. Glenn, Local Forecast Official, Weather Bureau, Huron, director.*

#### TENNESSEE WEATHER AND CROP SERVICE.

**Temperature.**—The mean was 5.2 above the normal; maximum, 84, at Springdale, 15th, 19th, and 20th, at Byrdstown, 19th, and at Newport, 20th; minimum, 11, at Byrdstown, 27th; greatest monthly range, 73, at Byrdstown; least monthly range, 56, at Covington.

**Precipitation.**—The average was 1.05 below the normal; greatest monthly, 10.90, at Memphis; least monthly, 1.21, at Strawberry Plains.

**Wind.**—Prevailing direction, south.—*J. B. Marbury, Local Forecast Official, Weather Bureau, Nashville, director.*

#### TEXAS.

**Temperature.**—The mean was 0.6 above the normal; maximum, 100, at Fort Kingdold, 19th, and at Aurora, 13th; minimum, 8, at Fort Hancock, 21st; greatest monthly range, 78, at Fort Hancock; least monthly range, 38, at Galveston.

**Precipitation.**—The average was 0.46 below the normal; greatest monthly, 9.53, at Arthur City; least monthly, 0.00, at six stations.

**Wind.**—Prevailing direction, south.—*D. D. Bryan, Galveston, director; I. M. Cline, Local Forecast Official, Weather Bureau, assistant.*

#### UTAH.

**Temperature.**—Maximum, 85, at Saint George, 13th; minimum, -22, at Scofield, 7th; greatest monthly range, 86, at Scofield; least monthly range, 47, at Salt Lake City.

**Precipitation.**—Greatest monthly, 7.60, at Silver Lake; least monthly, 0.18, at Saint George.

**Wind.**—Prevailing direction, southwest.—*G. N. Salisbury, Observer, Weather Bureau, Salt Lake City, director.*

#### VERMONT.

**Temperature.**—The mean was 6.8 above the normal; maximum, 76, at Brattleboro, 19th; minimum, 3, at Irasburg, 27th; greatest monthly range, 62, at Brattleboro; least monthly range, 51, at Burlington.

**Precipitation.**—The average was 2.09 below the normal; greatest monthly, 2.40, at Enosburg Falls; least monthly, 0.45, at Cornwall.

**Wind.**—Prevailing direction, southwest.—*J. Warren Smith, Weather Bureau, Boston, Mass., director.*

#### VIRGINIA.

**Temperature.**—Maximum, 92, at Richmond, 22d; minimum, 9, at Hot Springs, 28th; greatest monthly range, 77, at Richmond; least monthly range, 59, at Cape Henry.

**Precipitation.**—Greatest monthly, 3.15, at Birdsneest; least monthly, 0.33, at Christiansburg.

**Wind.**—Prevailing direction, southwest.—*Dr. E. A. Craighill, Lynchburg, director; J. N. Ryker, Observer, Weather Bureau, assistant.*

#### WASHINGTON.

**Temperature.**—The mean was 3.5 below the normal; maximum, 72, at Aberdeen, 24th; minimum, 7, at Hunters, 4th; greatest monthly range, 54, at Moxee Valley; least monthly range, 21, at Tatoosh Island.

**Precipitation.**—The average was 1.30 above the normal; greatest monthly, 13.70, at Neah Bay; least monthly, 0.49, at Connell.

**Wind.**—Prevailing direction, southwest.—*H. F. Alciatore, Observer, Weather Bureau, Seattle, director.*

#### WEST VIRGINIA.

**Temperature.**—Maximum, 88, at New Martinsville, 20th; minimum, 1, at Davis, 28th; greatest monthly range, 78, at Davis; least monthly range, 62, at Wheeling.

**Precipitation.**—Greatest monthly, 3.05, at Pleasant Hill; least monthly, 0.74, at Bloomery.

**Wind.**—Prevailing direction, west.—*H. W. Richardson, Observer, Weather Bureau, Parkersburg, director.*

#### WISCONSIN.

**Temperature.**—The mean was 8.0 above the normal; maximum, 82, at Prairie du Chien, 17th; minimum, -11, at Butternut, 27th; greatest monthly range, 84, at Weston; least monthly range, 48, at Bayfield.

**Precipitation.**—The average was normal; greatest monthly, 5.09, at Bayfield; least monthly, 0.98, at Stevens Point.

**Wind.**—Prevailing direction, southwest.—*W. L. Moore, Local Forecast Official, Weather Bureau, Milwaukee, director.*

#### WYOMING.

**Temperature.**—The mean was normal; maximum, 76, at Wheatland, 13th; minimum, -14, at Sheridan, 25th; greatest monthly range, 78, at Sheridan; least monthly range, 45, at Saratoga.

**Precipitation.**—The average was 0.94 above the normal; greatest monthly, 3.96, at Lander (V. O.); least monthly, 0.46, at Camp Pilot Butte.

**Wind.**—Prevailing direction, west.—*E. M. Ravenscraft, Observer, Weather Bureau, Cheyenne, director.*